

## Environmental Protection Agency

## § 86.1

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AUTHORITY: 42 U.S.C. 7401-7671q.

EDITORIAL NOTE: Nomenclature changes to part 86 appear at 60 FR 34377, June 30, 1995 and 69 FR 18803, Apr. 9, 2004.

### § 86.1 Reference materials.

(a) Documents listed in this section have been incorporated by reference into this part. The Director of the Federal Register approved the incorporation by reference as prescribed in 5 U.S.C. 552(a) and 1 CFR part 51. Anyone

may inspect copies at the U.S. EPA, Air and Radiation Docket and Information Center, 1301 Constitution Ave. NW., Room B102, EPA West Building, Washington, DC 20460, (202) 566-1744, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to:

[http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

(b) American Society for Testing and Materials (ASTM). Anyone may purchase copies of these materials from American Society for Testing and Materials at 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA, 19428-2959, (610) 832-9585, or <http://www.astm.org/>.

(1) ASTM C1549-09, Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer, approved August 1, 2009, IBR approved for § 86.1869-12(b).

(2) ASTM D975-04c, Standard Specification for Diesel Fuel Oils, published 2004, IBR approved for §§ 86.213-11, 86.1910.

(3) ASTM D1945-91, Standard Test Method for Analysis of Natural Gas by Gas Chromatography, published 1991, IBR approved for §§ 86.113-94, 86.513-94, 86.1213-94, 86.1313-94.

(4) ASTM D2163-91, Standard Test Method for Analysis of Liquefied Petroleum (LP) Gases and Propane Concentrates by Gas Chromatography, published 1991, IBR approved for §§ 86.113-94, 86.1213-94, 86.1313-94.

(5) ASTM D2986-95a (Reapproved 1999), Standard Practice for Evaluation of Air Assay Media by the Monodisperse DOP (Dioctyl Phthalate) Smoke Test, published 1999, IBR approved for § 86.1310-2007.

(6) ASTM D5186-91, Standard Test Method for Determination of Aromatic Content of Diesel Fuels by Supercritical Fluid Chromatography, published 1991, IBR approved for §§ 86.113-07, 86.1313-91, 86.1313-94, 86.1313-98, 86.1313-2007.

(7) ASTM E29-67 (Reapproved 1980), Standard Recommended Practice for Indicating Which Places of Figures Are To Be Considered Significant in Speci-

fied Limiting Values, published 1980, IBR approved for § 86.1105-87.

(8) ASTM E29-90, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications, published 1990, IBR approved for §§ 86.609-84, 86.609-96, 86.609-97, 86.609-98, 86.1009-84, 86.1009-96, 86.1442, 86.1708-99, 86.1709-99, 86.1710-99, 86.1728-99.

(9) ASTM E29-93a, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications, published 1993, IBR approved for §§ 86.004-15, 86.007-11, 86.007-15, 86.098-15, 86.1803-01, 86.1823-01, 86.1824-01, 86.1825-01, 86.1837-01.

(10) ASTM E903-96, Standard Test Method for Solar Absorptance, Reflectance, and Transmittance of Materials Using Integrating Spheres, approved April 10, 1996, IBR approved for § 86.1869-12(b).

(11) ASTM E1918-06, Standard Test Method for Measuring Solar Reflectance of Horizontal and Low-Sloped Surfaces in the Field, approved August 15, 2006, IBR approved for § 86.1869-12(b).

(12) ASTM F1471-93, Standard Test Method for Air Cleaning Performance of a High-Efficiency Particulate Air-Filter System, published 1993, IBR approved for § 86.1310-2007.

(c) American National Standards Institute (ANSI). Anyone may purchase copies of these materials from American National Standards Institute, 25 W 43rd Street, 4th Floor, New York, NY 10036, (212) 642-4900, <http://www.ansi.org>.

(1) ANSI/AGA NGV1-1994, Standard for Compressed Natural Gas Vehicle (NGV) Fueling Connection Devices, 1994, IBR approved for §§ 86.001-9, 86.004-9, 86.098-8, 86.099-8, 86.099-9, 86.1810-01.

(2) [Reserved]

(d) California Air Resources Board, 1001 I Street, Sacramento, CA, 95812, (916) 322-2884, <http://www.arb.ca.gov>.

(1) California Regulatory Requirements Applicable to the “LEV II” Program, including:

(i) California Non-Methane Organic Gas Test Procedures, August 5, 1999, IBR approved for §§ 86.1803-01, 86.1810-01, 86.1811-04.

(ii) [Reserved]

(2) California Regulatory Requirements Applicable to the National Low Emission Vehicle Program, October

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1996, IBR approved for §§ 86.113–04, 86.612–97, 86.1012–97, 86.1702–99, 86.1708–99, 86.1709–99, 86.1717–99, 86.1735–99, 86.1771–99, 86.1775–99, 86.1776–99, 86.1777–99, Appendix XVI, Appendix XVII.

(3) California Regulatory Requirements known as On-board Diagnostics II (OBD–II), Approved on April 21, 2003, Title 13, California Code Regulations, Section 1968.2, Malfunction and Diagnostic System Requirements for 2004 and Subsequent Model-Year Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles and Engines (OBD–II), IBR approved for § 86.1806–05.

(4) California Regulatory Requirements known as On-board Diagnostics II (OBD–II), Approved on November 9, 2007, Title 13, California Code Regulations, Section 1968.2, Malfunction and Diagnostic System Requirements for 2004 and Subsequent Model-Year Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles and Engines (OBD–II), IBR approved for §§ 86.007–17, 86.1806–05.

(e) International Organization for Standardization (ISO). Anyone may purchase copies of these materials from International Organization for Standardization, Case Postale 56, CH–1211 Geneva 20, Switzerland, 41–22–749–01–11, <http://www.iso.org>.

(1) ISO 9141–2, Road vehicles—Diagnostic systems—Part 2: CARB requirements for interchange of digital information, February 1, 1994, IBR approved for §§ 86.005–17, 86.007–17, 86.099–17, 86.1806–01, 86.1806–04, 86.1806–05.

(2) ISO 14230–4:2000(E), Road vehicles—Diagnostic systems—KWP 2000 requirements for emission-related systems, June 1, 2000, IBR approved for §§ 86.005–17, 86.007–17, 86.099–17, 86.1806–01, 86.1806–04, 86.1806–05.

(3) ISO 15765–4.3:2001, Road Vehicles—Diagnostics on Controller Area Networks (CAN)—Part 4: Requirements for emissions-related systems, December 14, 2001, IBR approved for §§ 86.005–17, 86.007–17, 86.1806–04, 86.1806–05.

(4) ISO 15765–4:2005(E), Road Vehicles—Diagnostics on Controller Area Networks (CAN)—Part 4: Requirements for emissions-related systems, January 15, 2005, IBR approved for §§ 86.007–17, 86.010–18, 86.1806–05.

(5) ISO 13837:2008(E), Road Vehicles—Safety glazing materials—Method for

the determination of solar transmittance, First edition, April 15, 2008, IBR approved for § 86.1869–12(b).

(f) National Institute of Standards and Technology (NIST). Anyone may purchase copies of these materials from National Institute of Standards and Technology, 100 Bureau Drive, Gaithersburg, MD, 20899, <http://www.nist.gov>.

(1) NIST Special Publication 811, Guide for the Use of the International System of Units (SI), 1995 Edition, IBR approved for § 86.1901.

(2) [Reserved]

(g) Society of Automotive Engineers (SAE). Anyone may purchase copies of these materials from Society of Automotive Engineers, 400 Commonwealth Dr., Warrendale, PA 15096–0001, (877) 606–7323 (U.S. and Canada) or (724) 776–4970 (outside the U.S. and Canada), <http://www.sae.org>.

(1) SAE J1151, Methane Measurement Using Gas Chromatography, December 1991, (as found in 1994 SAE Handbook—SAE International Cooperative Engineering Program, Volume 1: Materials, Fuels, Emissions, and Noise; Section 13 and page 170 (13.170)), IBR approved for §§ 86.111–94; 86.1311–94.

(2) SAE J1634, Electric Vehicle Energy Consumption and Range Test Procedure, Cancelled October 2002, IBR approved for § 86.1811–04(n).

(3) SAE J1349, Engine Power Test Code—Spark Ignition and Compression Ignition, June 1990, IBR approved for §§ 86.094–8, 86.096–8.

(4) SAE J1711, Recommended Practice for Measuring the Exhaust Emissions and Fuel Economy of Hybrid-Electric Vehicles, Including Plug-In Hybrid Vehicles, June 2010, IBR approved for § 86.1811–04(n).

(5) SAE J1850, Class B Data Communication Network Interface, July 1995, IBR approved for §§ 86.099–17, 86.1806–01.

(6) SAE J1850, Class B Data Communication Network Interface, Revised May 2001, IBR approved for §§ 86.005–17, 86.007–17, 86.1806–04, 86.1806–05.

(7) SAE J1877, Recommended Practice for Bar-Coded Vehicle Identification Number Label, July 1994, IBR approved for §§ 86.095–35, 86.1806–01.

(8) SAE J1892, Recommended Practice for Bar-Coded Vehicle Emission

Configuration Label, October 1993, IBR approved for §§ 86.095–35, 86.1806–01.

(9) SAE J1930, Electrical/Electronic Systems Diagnostic Terms, Definitions, Abbreviations, and Acronyms, Revised May 1998, IBR approved for §§ 86.004–38, 86.007–38, 86.010–38, 86.096–38, 86.1808–01, 86.1808–07.

(10) SAE J1930, Electrical/Electronic Systems Diagnostic Terms, Definitions, Abbreviations, and Acronyms—Equivalent to ISO/TR 15031–2: April 30, 2002, Revised April 2002, IBR approved for §§ 86.005–17, 86.007–17, 86.010–18, 86.1806–04, 86.1806–05.

(11) SAE J1937, Engine Testing with Low Temperature Charge Air Cooler Systems in a Dynamometer Test Cell, November 1989, IBR approved for §§ 86.1330–84, 86.1330–90.

(12) SAE J1939, Recommended Practice for a Serial Control and Communications Vehicle Network, Revised October 2007, IBR approved for §§ 86.010–18.

(13) SAE J1939–11, Physical Layer—250K bits/s, Shielded Twisted Pair, December 1994, IBR approved for §§ 86.005–17, 86.1806–05.

(14) SAE J1939–11, Physical Layer—250K bits/s, Shielded Twisted Pair, Revised October 1999, IBR approved for §§ 86.005–17, 86.007–17, 86.1806–04, 86.1806–05.

(15) SAE J1939–13, Off-Board Diagnostic Connector, July 1999, IBR approved for §§ 86.005–17, 86.007–17, 86.1806–04, 86.1806–05.

(15) SAE J1939–13, Off-Board Diagnostic Connector, Revised March 2004, IBR approved for § 86.010–18.

(16) SAE J1939–21, Data Link Layer, July 1994, IBR approved for §§ 86.005–17, 86.1806–05.

(18) SAE J1939–21, Data Link Layer, Revised April 2001, IBR approved for §§ 86.005–17, 86.007–17, 86.1806–04, 86.1806–05.

(19) SAE J1939–31, Network Layer, Revised December 1997, IBR approved for §§ 86.005–17, 86.007–17, 86.1806–04, 86.1806–05.

(20) SAE J1939–71, Vehicle Application Layer, May 1996, IBR approved for §§ 86.005–17, 86.1806–05.

(21) SAE J1939–71, Vehicle Application Layer—J1939–71 (through 1999), Revised August 2002, IBR approved for §§ 86.005–17, 86.007–17, 86.1806–04, 86.1806–05.

(22) SAE J1939–71, Vehicle Application Layer (Through February 2007), Revised January 2008, IBR approved for § 86.010–38.

(23) SAE J1939–73, Application Layer—Diagnostics, February 1996, IBR approved for §§ 86.005–17, 86.1806–05.

(24) SAE J1939–73, Application Layer—Diagnostics, Revised June 2001, IBR approved for §§ 86.005–17, 86.007–17, 86.1806–04, 86.1806–05.

(25) SAE J1939–73, Application Layer—Diagnostics, Revised September 2006, IBR approved for §§ 86.010–18, 86.010–38.

(26) SAE J1939–81, Recommended Practice for Serial Control and Communications Vehicle Network Part 81—Network Management, July 1997, IBR approved for §§ 86.005–17, 86.007–17, 86.1806–04, 86.1806–05.

(27) SAE J1939–81, Network Management, Revised May 2003, IBR approved for § 86.010–38.

(28) SAE J1962, Diagnostic Connector, January 1995, IBR approved for §§ 86.099–17, 86.1806–01.

(29) SAE J1962, Diagnostic Connector Equivalent to ISO/DIS 15031–3; December 14, 2001, Revised April 2002, IBR approved for §§ 86.005–17, 86.007–17, 86.010–18, 86.1806–04, 86.1806–05.

(30) SAE J1978, OBD II Scan Tool—Equivalent to ISO/DIS 15031–4; December 14, 2001, Revised April 2002, IBR approved for §§ 86.005–17, 86.007–17, 86.010–18, 86.1806–04, 86.1806–05.

(31) SAE J1979, E/E Diagnostic Test Modes, July 1996, IBR approved for §§ 86.099–17, 86.1806–01.

(32) SAE J1979, E/E Diagnostic Test Modes, Revised September 1997, IBR approved for §§ 86.004–38, 86.007–38, 86.010–38, 86.096–38, 86.1808–01, 86.1808–07.

(33) SAE J1979, E/E Diagnostic Test Modes—Equivalent to ISO/DIS 15031–5; April 30, 2002, Revised April 2002, IBR approved for §§ 86.005–17, 86.007–17, 86.099–17, 86.1806–01, 86.1806–04, 86.1806–05.

(34) SAE J1979, (R) E/E Diagnostic Test Modes, Revised May 2007, IBR approved for § 86.010–18, 86.010–38.

(35) SAE J2012, Recommended Practice for Diagnostic Trouble Code Definitions, July 1996, IBR approved for §§ 86.099–17, 86.1806–01.

(36) SAE J2012, (R) Diagnostic Trouble Code Definitions Equivalent to ISO/

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DIS 15031–6: April 30, 2002, Revised April 2002, IBR approved for §§ 86.005–17, 86.007–17, 86.010–18, 86.1806–04, 86.1806–05.

(37) SAE J2064 FEB2011, R134a Refrigerant Automotive Air-Conditioned Hose, Revised February 2011, IBR approved for § 86.1867–12(a) and (b).

(38) SAE J2284–3, High Speed CAN (HSC) for Vehicle Applications at 500 KBPS, May 2001, IBR approved for §§ 86.096–38, 86.004–38, 86.007–38, 86.010–38, 86.1808–01, 86.1808–07.

(39) SAE J2403, Medium/Heavy-Duty E/E Systems Diagnosis Nomenclature—Truck and Bus, Revised August 2007, IBR approved for §§ 86.007–17, 86.010–18, 86.010–38, 86.1806–05.

(40) SAE J2534, Recommended Practice for Pass-Thru Vehicle Programming, February 2002, IBR approved for §§ 86.004–38, 86.007–38, 86.010–38, 86.096–38, 86.1808–01, 86.1808–07.

(41) SAE J2534–1, (R) Recommended Practice for Pass-Thru Vehicle Programming, Revised December 2004, IBR approved for § 86.010–38.

(42) SAE J2727 FEB2012, Mobile Air Conditioning System Refrigerant Emission Charts for R–134a and R–1234yf, Revised February 2012, IBR approved for § 86.1867–12(a) and (b).

(43) SAE J2765 OCT2008, Procedure for Measuring System COP [Coefficient of Performance] of a Mobile Air Conditioning System on a Test Bench, issued October 2008, IBR approved for § 86.1868–12(h).

(h) Truck and Maintenance Council, 950 North Glebe Road, Suite 210, Arlington, VA 22203–4181, (703) 838–1754.

(1) TMC RP 1210B, Revised June 2007, WINDOWSTMCOMMUNICATION API, IBR approved for § 86.010–38.

(2) [Reserved]

[77 FR 63150, Oct. 15, 2012]

## Subpart A—General Provisions for Emission Regulations for 1977 and Later Model Year New Light-Duty Vehicles, Light-Duty Trucks and Heavy-Duty Engines, and for 1985 and Later Model Year New Gasoline Fueled, Natural Gas-Fueled, Liquefied Petroleum Gas-Fueled and Methanol-Fueled Heavy-Duty Vehicles

SOURCE: 42 FR 32907, June 28, 1977, unless otherwise noted.

### § 86.000–2 Definitions.

The definitions of § 86.098–2 continue to apply to 1998 and later model year vehicles. The definitions listed in this section apply beginning with the 2000 model year.

*AC1* means a test procedure as described in § 86.162–00 which simulates testing with air conditioning operating in an environmental test cell by adding the air conditioning compressor load to the normal dynamometer forces.

*AC2* means a test procedure as described in § 86.162–00 which simulates testing with air conditioning operating in an environmental test cell by adding a heat load to the passenger compartment.

*Alternative fuels* means any fuel other than gasoline and diesel fuels, such as methanol, ethanol, and gaseous fuels.

*866 Cycle* means the test cycle that consists of the last 866 seconds (seconds 505 to 1372) of the EPA Urban Dynamometer Driving Schedule, described in § 86.115–00 and listed in appendix I, paragraph (a), of this part.

*Environmental test cell* means a test cell capable of wind-speed, solar thermal load, ambient temperature, and humidity control or simulation which meets the requirements of § 86.161–00 for running emission tests with the air conditioning operating.

*Federal Test Procedure, or FTP* means the test procedure as described in § 86.130–00 (a) through (d) and (f) which is designed to measure urban driving tail pipe exhaust emissions and evaporative emissions over the Urban Dynamometer Driving Schedule as described in appendix I to this part.